

Appl. No. 09/842,148
Amdt dated Sept. 28, 2004
Reply to Office action of June 28, 2004
Page 2

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A system for treating cardiac arrhythmia, the system comprising:

a sensing lead configured to sense electrical signals attendant to the depolarization and repolarization of a heart and indicative of heart rate;

a processor configured to receive the electrical signals indicative of heart rate, to detect cardiac arrhythmia only from heart rate and without regard to patient hemodynamic condition by applying arrhythmia detection algorithms and predefined arrhythmia criteria to the electrical signals indicative of heart rate, to discriminate between an atrial arrhythmia and a ventricular arrhythmia as a function of only heart rate, and to generate an arrhythmia signal as a function of the type of arrhythmia discriminated as a function of only the heart rate; and

a drug delivery system configured to receive the arrhythmia signal, the drug delivery system comprising:

a first drug pump containing a first drug;

a second drug pump containing a second drug;

a first infusion apparatus coupled to the first drug pump; and

a second infusion apparatus coupled to the second drug pump,

wherein the drug delivery system is configured to activate the first drug pump to dispense the first drug via the first infusion apparatus when the arrhythmia signal is indicative of atrial arrhythmia, and

wherein the drug delivery system is configured to activate the second drug pump to dispense the second drug via the second infusion apparatus when the arrhythmia signal is indicative of ventricular arrhythmia,

Appl. No. 09/842,148
Amtd. dated Sept. 28, 2004
Reply to Office action of June 28, 2004
Page 3

2. (original) The system of claim 1, further comprising a pacing system coupled to the processor, the pacing system including a pacing lead configured to provide pacing pulses to cardiac tissue.
3. (original) The system of claim 1, wherein the system is implantable in a human body.
4. (original) The system of claim 1, wherein the sensing lead is a first sensing lead, the system further comprising a second sensing lead configured to sense electrical signals attendant to the depolarization and repolarization of the heart, wherein one of the sensing leads is located in an atrium of the heart and the other of the sensing leads is located in a ventricle of the heart.
5. (original) The system of claim 1, further comprising a controller, the controller configured to receive the arrhythmia signal to generate a first control signal to activate the first drug pump when the arrhythmia signal is indicative of atrial arrhythmia, and to generate a second control signal to activate the second drug pump when the arrhythmia signal is indicative of ventricular arrhythmia.
6. (original) The system of claim 5, further comprising memory, the controller interacting with the memory to access treatment instructions and parameters.
7. (original) The system of claim 5, further comprising an input/output device coupled to the controller.
8. (original) The system of claim 1, the drug delivery system further comprising:
 - a third drug pump containing a third drug; and
 - a third infusion apparatus coupled to the third drug pump;wherein the drug delivery system is configured to activate the third drug pump as a function of the arrhythmia signal.

Appl. No. 09/842,148
Amdt. dated Sept. 28, 2004
Reply to Office action of June 28, 2004
Page 4

9. (original) The system of claim 1, wherein the first drug is selected from the group consisting of digitalis and beta blockers.

10. (original) The system of claim 1, wherein the second drug is selected from the group consisting of lidocaine and amiodarone

11. (Currently amended) A method of treating arrhythmia in a patient, comprising:
providing a drug delivery system for implantation in a patient, the drug delivery system comprising a first drug pump containing a first drug and a second drug pump containing a second drug;

monitoring the heart rate of a patient by applying arrhythmia detection algorithms and predefined arrhythmia criteria to electrical signals attendant to the depolarization and repolarization of a heart and indicative of heart rate and discriminating between an atrial arrhythmia and a ventricular arrhythmia as a function of only the heart rate and without regard to patient hemodynamic condition;

generating an arrhythmia signal as a function of the type of arrhythmia discriminated as a function of only the heart rate and when the heart rate meets defined arrhythmia criteria;

the arrhythmia signal being indicative of one of atrial arrhythmia or ventricular arrhythmia;

activating the first drug pump to dispense the first drug when the arrhythmia signal is indicative of atrial arrhythmia, and

activating the second drug pump to dispense the second drug when the arrhythmia signal is indicative of ventricular arrhythmia.

12. (cancelled)

13. (original) The method of claim 11, further comprising:

selecting a first drug dosage;

Appl. No. 09/842,148
Amtd. dated Sept. 28, 2004
Reply to Office action of June 28, 2004
Page 5

activating the first drug pump to dispense the first drug dosage;
selecting a second drug dosage; and
activating the second drug pump to dispense the second drug dosage.

14. (original) The method of claim 13, wherein a dosage comprises one of a drip dosage or a bolus dosage.

15. (original) The method of claim 11, wherein the arrhythmia signal is further indicative of acute ventricular arrhythmia, the method further comprising:

activating the second drug pump to dispense a bolus of the second drug; and
applying a defibrillating pulse to the patient's heart.

16. (original) The method of claim 15, wherein the defibrillating pulse is applied after the bolus is dispensed.

17-43. (cancelled)